REMARKS

Amendment summary

The subject matter of claim 5 is incorporated into claim 1.

No new matter is added by this Amendment, and Applicants respectfully submit that entry of this Amendment is proper.

Response to rejection of Claims 1-5 under 35 U.S.C. § 103

Claims 1-5 have been rejected under 35 U.S.C. § 103 as allegedly being unpatentable over JP 09-272308 (JP '308) or JP 10-297209 (JP '209) taken in view of JP 2001-260609 (JP '609), JP 2614441 (JP '441) and U.S. Patent Application Publication No. 2002/0134480 to Taguchi et al. (hereinafter "Taguchi"), optionally further in view of at least one of GB 2072576 (GB '576) or U.S. Patent No. 2,575,249 to Connell et al. (hereinafter "Connell"). Applicant respectfully submits that the presently claimed invention is not obvious over the cited references because, e.g., JP '209 teaches against the use of the presently recited amount of sulfur.

The present claims recite a heavy duty pneumatic tire comprising a carcass layer, an innerliner layer and an inner face protection layer arranged therebetween, characterized in that the inner face protection layer is comprised of a rubber layer A adjacent to the innerliner layer and a rubber layer B adjacent to the carcass layer. Each rubber composition of the carcass layer and the rubber layer B is compounded with a rubber component, sulfur and a cobalt compound of an organic acid, and an amount of sulfur compounded satisfies the following equations (I) and (II):

$$S_A < S_B \leq S_C \quad \cdots\cdots (I)$$

$$2 \leq S_A \leq 2.5 \quad \cdots\cdots (II)$$

In the equations, S_A, S_B, and S_C are an amount of sulfur compounded in the rubber composition constituting the rubber layer A, rubber layer B and the carcass layer, respectively, based on 100 parts by mass of the rubber component. Further, an elongation at break of the rubber composition constituting the rubber layer A is 1.00-1.45 times an elongation at break of the rubber composition constituting the rubber layer B.

Applicants have found that, due to the presently recited relationship between the amounts of sulfur in the rubber layer A, the rubber layer B, and the carcass layer, the rubber layer B (the rubber layer adjacent to the carcass layer) has a high creep resistance and has a compounding near to that of the carcass layer, which suppresses influences that may result from differences between its compounding composition and the compounding composition of the carcass layer. Further, the rubber layer A (the rubber layer adjacent to the innerliner layer) has a high fracture resistance, even after it has been deteriorated by oxidation.

As a result, creeping of the carcass rubber can be suppressed and the resistance to oxidation deterioration can be further improved while adhesion properties between the ply cord and the carcass rubber are maintained.

Applicants respectfully traverse the rejection on the basis that that Paragraph No. [0007] in JP '209 teaches away from using less than 3 parts by weight sulfur in the rubber layer A. Accordingly this aspect of the presently claimed invention is not anticipated or rendered obvious by the cited references.

In view of the above, Applicants respectfully request the reconsideration and withdrawal of this § 103 rejection.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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